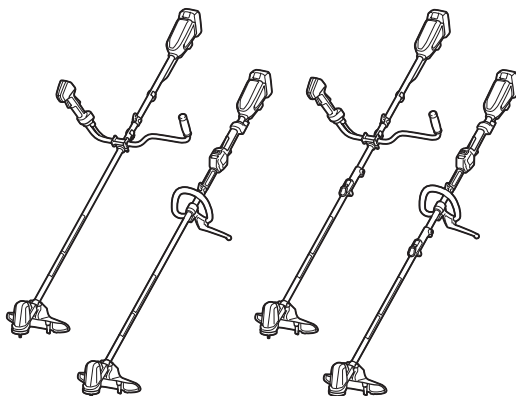


INSTRUCTION MANUAL



Cordless Grass Trimmer

DUR190U
DUR190L
DUR191U
DUR191L



Read before use.

SPECIFICATIONS

Model:		DUR190U	DUR190L	DUR191U	DUR191L
Type of handle		Bike handle	Loop handle	Bike handle	Loop handle
No load speed		3: 6,000 min ⁻¹ 2: 5,100 min ⁻¹ 1: 3,500 min ⁻¹			
Overall length (without cutting tool)		1,775 mm			
Nylon cord diameter		2.0 - 2.4 mm			
Applicable cutting tool and cutting diameter	3-tooth blade (P/N 191J34-5)	230 mm			
	4-tooth blade (P/N 729025-2)	230 mm			
	Nylon cutting head (P/N 126674-0)	300 mm			
	Plastic blade (P/N 126642-3)	230 mm			
Rated voltage		D.C. 18 V			
Net weight		3.1 - 3.4 kg	2.9 - 3.2 kg	3.4 - 3.7 kg	3.2 - 3.5 kg

- Due to our continuing program of research and development, the specifications herein are subject to change without notice.
- Specifications may differ from country to country.
- The weight may differ depending on the attachment(s), including the battery cartridge. The lightest and heaviest combination, according to EPTA-Procedure 01/2014, are shown in the table.

Applicable battery cartridge and charger

Battery cartridge	BL1815N / BL1820 / BL1820B / BL1830 / BL1830B / BL1840 / BL1840B / BL1850 / BL1850B / BL1860B
Charger	DC18RC / DC18RD / DC18RE / DC18SD / DC18SE / DC18SF / DC18SH

- Some of the battery cartridges and chargers listed above may not be available depending on your region of residence.

⚠WARNING: Only use the battery cartridges and chargers listed above. Use of any other battery cartridges and chargers may cause injury and/or fire.

Recommended battery adapter

Battery adapter	PDC01
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- The battery adapter(s) listed above may not be available depending on your region of residence.
- Before using the battery adapter, read instruction and cautionary markings on the battery adapter.

Noise

Model DUR190U

Cutting tool	Sound pressure level (L _{pa}) dB(A)		Sound power level (L _{wa}) dB(A)		Applicable standard
	L _{pa} dB(A)	Uncertainty (K) dB(A)	L _{wa} dB(A)	Uncertainty (K) dB(A)	
4-tooth blade	77.0	3.9	91.6	2.4	ISO22868 (ISO11806-1)
Nylon cutting head	74.0	1.9	87.1	0.9	ISO22868 (ISO11806-1)/ EN50636-2-91
Plastic blade	75.6	1.3	85.9	2.1	ISO22868 (ISO11806-1)/ EN50636-2-91

Model DUR190L

Cutting tool	Sound pressure level (L_{pA}) dB(A)		Sound power level (L_{wA}) dB(A)		Applicable standard
	L_{pA} dB(A)	Uncer- tainty (K) dB(A)	L_{wA} dB(A)	Uncer- tainty (K) dB(A)	
4-tooth blade	77.0	3.9	91.6	2.4	ISO22868 (ISO11806-1)
Nylon cutting head	74.0	1.9	87.1	0.9	ISO22868 (ISO11806-1)/ EN50636-2-91
Plastic blade	75.6	1.3	85.9	2.1	ISO22868 (ISO11806-1)/ EN50636-2-91

Model DUR191U

Cutting tool	Sound pressure level (L_{pA}) dB(A)		Sound power level (L_{wA}) dB(A)		Applicable standard
	L_{pA} dB(A)	Uncer- tainty (K) dB(A)	L_{wA} dB(A)	Uncer- tainty (K) dB(A)	
4-tooth blade	77.0	3.9	91.6	2.4	ISO22868 (ISO11806-1)
Nylon cutting head	74.0	1.9	87.1	0.9	ISO22868 (ISO11806-1)/ EN50636-2-91
Plastic blade	75.6	1.3	85.9	2.1	ISO22868 (ISO11806-1)/ EN50636-2-91

Model DUR191L

Cutting tool	Sound pressure level (L_{pA}) dB(A)		Sound power level (L_{wA}) dB(A)		Applicable standard
	L_{pA} dB(A)	Uncer- tainty (K) dB(A)	L_{wA} dB(A)	Uncer- tainty (K) dB(A)	
4-tooth blade	77.0	3.9	91.6	2.4	ISO22868 (ISO11806-1)
Nylon cutting head	74.0	1.9	87.1	0.9	ISO22868 (ISO11806-1)/ EN50636-2-91
Plastic blade	75.6	1.3	85.9	2.1	ISO22868 (ISO11806-1)/ EN50636-2-91

- Even if the sound pressure level listed above is 80 dB (A) or less, the level under working may exceed 80 dB (A). Wear ear protection.

NOTE: The declared noise emission value(s) has been measured in accordance with a standard test method and may be used for comparing one tool with another.

NOTE: The declared noise emission value(s) may also be used in a preliminary assessment of exposure.

⚠ WARNING: Wear ear protection.

⚠ WARNING: The noise emission during actual use of the power tool can differ from the declared value(s) depending on the ways in which the tool is used especially what kind of workpiece is processed.

⚠ WARNING: Be sure to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

Vibration

Model DUR190U

Cutting tool	Left hand		Right hand		Applicable standard
	$a_{h,w}$ (m/s ²)	Uncertainty K (m/s ²)	$a_{h,w}$ (m/s ²)	Uncertainty K (m/s ²)	
4-tooth blade	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)
Nylon cutting head	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)
Plastic blade	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)

Model DUR190L

Cutting tool	Left hand		Right hand		Applicable standard
	$a_{h,w}$ (m/s ²)	Uncertainty K (m/s ²)	$a_{h,w}$ (m/s ²)	Uncertainty K (m/s ²)	
4-tooth blade	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)
Nylon cutting head	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)
Plastic blade	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)

Model DUR191U

Cutting tool	Left hand		Right hand		Applicable standard
	$a_{h,w}$ (m/s ²)	Uncertainty K (m/s ²)	$a_{h,w}$ (m/s ²)	Uncertainty K (m/s ²)	
4-tooth blade	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)
Nylon cutting head	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)
Plastic blade	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)

Model DUR191L

Cutting tool	Left hand		Right hand		Applicable standard
	$a_{h,w}$ (m/s ²)	Uncertainty K (m/s ²)	$a_{h,w}$ (m/s ²)	Uncertainty K (m/s ²)	
4-tooth blade	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)
Nylon cutting head	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)
Plastic blade	≤ 2.5	1.5	≤ 2.5	1.5	ISO22867 (ISO11806-1)

NOTE: The declared vibration total value(s) has been measured in accordance with a standard test method and may be used for comparing one tool with another.

NOTE: The declared vibration total value(s) may also be used in a preliminary assessment of exposure.

⚠WARNING: The vibration emission during actual use of the power tool can differ from the declared value(s) depending on the ways in which the tool is used especially what kind of workpiece is processed.

⚠WARNING: Be sure to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

Symbols

The followings show the symbols used for the equipment. Be sure that you understand their meaning before use.

	Take particular care and attention.
	Read instruction manual.
	Keep distance at least 15 m.
	Danger; be aware of thrown objects.
	Caution; kickback
	Wear a helmet, goggles and ear protection.
	Wear protective gloves.
	Wear sturdy boots with nonslip soles. Steelted safety boots are recommended.
	Do not expose to moisture.
	Ni-MH Li-ion Only for EU countries Do not dispose of electric equipment or battery pack together with household waste material! In observance of the European Directives, on Waste Electric and Electronic Equipment and Batteries and Accumulators and Waste Batteries and Accumulators and their implementation in accordance with national laws, electric equipment and batteries and battery pack(s) that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

EC Declaration of Conformity

For European countries only

The EC declaration of conformity is included as Annex A to this instruction manual.

SAFETY WARNINGS

General power tool safety warnings

WARNING: Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

1. **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

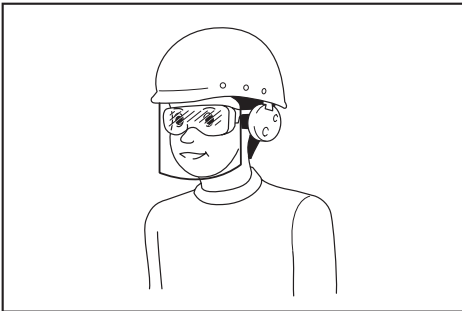
Electrical safety

1. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
2. **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
3. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
4. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
5. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
6. **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.
7. **Power tools can produce electromagnetic fields (EMF) that are not harmful to the user.** However, users of pacemakers and other similar medical devices should contact the maker of their device and/or doctor for advice before operating this power tool.

Personal safety

1. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
2. **Use personal protective equipment. Always wear eye protection.** Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
3. **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
4. **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

5. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
6. **Dress properly. Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
7. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.
8. **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.
9. **Always wear protective goggles to protect your eyes from injury when using power tools. The goggles must comply with ANSI Z87.1 in the USA, EN 166 in Europe, or AS/NZS 1336 in Australia/New Zealand. In Australia/New Zealand, it is legally required to wear a face shield to protect your face, too.**
6. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
7. **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.
8. **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.
9. **When using the tool, do not wear cloth work gloves which may be entangled.** The entanglement of cloth work gloves in the moving parts may result in personal injury.



It is an employer's responsibility to enforce the use of appropriate safety protective equipments by the tool operators and by other persons in the immediate working area.

Power tool use and care

1. **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
2. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
3. **Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
4. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
5. **Maintain power tools and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.

Battery tool use and care

1. **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
2. **Use power tools only with specifically designed battery packs.** Use of any other battery packs may create a risk of injury and fire.
3. **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
4. **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.
5. **Do not use a battery pack or tool that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behaviour resulting in fire, explosion or risk of injury.
6. **Do not expose a battery pack or tool to fire or excessive temperature.** Exposure to fire or temperature above 130 °C may cause explosion.
7. **Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions.** Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

Service

1. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
2. **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers.
3. **Follow instruction for lubricating and changing accessories.**

Important safety instructions for the tool

⚠ WARNING: Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

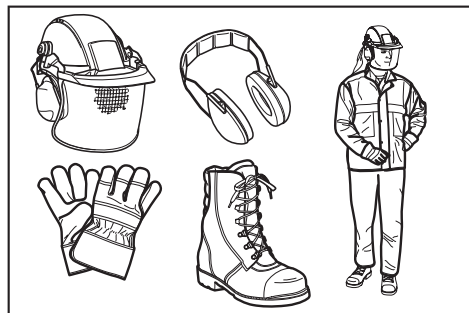
Intended use

1. This tool is only intended for cutting grass, weeds, bushes and undergrowth. It should not be used for any other purpose such as edging or hedge cutting as this may cause injury.

General instructions

1. Never allow people unfamiliar with these instructions, people (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge to use the tool. Children should be supervised to ensure that they do not play with the tool.
2. Before starting the tool, read this instruction manual to become familiar with the handling of the tool.
3. Do not lend the tool to a person with insufficient experience or knowledge regarding handling of brushcutters and string trimmers.
4. When lending the tool, always attach this instruction manual.
5. Handle the tool with the utmost care and attention.
6. Never use the tool after consuming alcohol or drugs, or if feeling tired or ill.
7. Never attempt to modify the tool.
8. Follow the regulations about handling of brushcutters and string trimmers in your country.

Personal protective equipment



1. Wear safety helmet, protective goggles and protective gloves to protect yourself from flying debris or falling objects.
2. Wear ear protection such as ear muffs to prevent hearing loss.

3. Wear proper clothing and shoes for safe operation, such as a work overall and sturdy, non-slip shoes. Do not wear loose clothing or jewelry. Loose clothes, jewelry or long hair can be caught in moving parts.
4. When touching the cutting blade, wear protective gloves. Cutting blades can cut bare hands severely.

Work area safety

1. Operate the tool under good visibility and daylight conditions only. Do not operate the tool in darkness or fog.
2. Do not operate the tool in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. The tool creates sparks which may ignite the dust or fumes.
3. During operation, never stand on an unstable or slippery surface or a steep slope. During the cold season, beware of ice and snow and always ensure secure footing.
4. During operation, keep bystanders or animals at least 15 m away from the tool. Stop the tool as soon as someone approaches.
5. Never operate the tool while people, especially children, or pets are nearby.
6. Before operation, examine the work area for stones or other solid objects. They can be thrown or cause dangerous kickback and result in serious injury and/or property damage.
7. **⚠ WARNING:** Use of this product can create dust containing chemicals which may cause respiratory or other illnesses. Some examples of these chemicals are compounds found in pesticides, insecticides, fertilizers and herbicides. Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Electrical and battery safety

1. Do not expose the tool to rain or wet conditions. Water entering the tool will increase the risk of electric shock.
2. Do not use the tool if the switch does not turn it on and off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
3. Prevent unintentional starting. Ensure the switch is in the off-position before installing a battery pack, picking up or carrying the tool. Carrying the tool with your finger on the switch or energising the tool that have the switch on invites accidents.
4. Do not dispose of the battery(ies) in a fire. The cell may explode. Check with local codes for possible special disposal instructions.
5. Do not open or mutilate the battery(ies). Released electrolyte is corrosive and may cause damage to the eyes or skin. It may be toxic if swallowed.
6. Do not charge battery in rain, or in wet locations.

Putting into operation

1. Before assembling or adjusting the tool, remove the battery cartridge.
2. Before handling the cutter blade, wear protective gloves.
3. Before installing the battery cartridge, inspect the tool for damages, loose screws/nuts or improper assembly. Sharpen blunt cutter blade. If the cutter blade is bent or damaged, replace it. Check all control levers and switches for easy action. Clean and dry the handles.
4. Never attempt to switch on the tool if it is damaged or not fully assembled. Otherwise serious injury may result.
5. Adjust the shoulder harness and hand grip to suit the operator's body size.
6. When inserting a battery cartridge, keep the cutting attachment clear of your body and other object, including the ground. It may rotate when starting and may cause injury or damage to the tool and/or property.
7. Remove any adjusting key, wrench or blade cover before turning the tool on. An accessory left attached to a rotating part of the tool may result in personal injury.
8. The cutting tool has to be equipped with the guard. Never run the tool with damaged guards or without guards in place!
9. Make sure there are no electrical cables, water pipes, gas pipes etc. that could cause a hazard if damaged by use of the tool.
11. When you leave the tool, even if it is a short time, always remove the battery cartridge. The unattended tool with the battery cartridge installed may be used by unauthorized person and cause serious accident.
12. If grass or branches get caught between the cutting attachment and guard, always turn the tool off and remove the battery cartridge before cleaning. Otherwise the cutting attachment may rotate unintentionally and cause serious injury.
13. Never touch moving hazardous parts before the moving hazardous parts have come to a complete stop and the battery cartridge is removed.
14. If the cutting attachment hits stones or other hard objects, immediately turn the tool off. Then remove the battery cartridge and inspect the cutting attachment.
15. Check the cutting attachment frequently during operation for cracks or damages. Before the inspection, remove the battery cartridge and wait until the cutting attachment stops completely. Replace damaged cutting attachment immediately, even if it has only superficial cracks.
16. Never cut above waist height.
17. Before starting the cutting operation, wait until the cutting attachment reaches a constant speed after turning the tool on.
18. When using a cutting blade, swing the tool evenly in half-circle from right to left, like using a scythe.
19. Hold the tool by insulated gripping surfaces only, because the cutter blade may contact hidden wiring. Cutter blades contacting a "live" wire may make exposed metal parts of the tool "live" and could give the operator an electric shock.
20. Do not start the tool when the cutting tool is tangled with cut grass.
21. Before starting the tool, be sure that the cutting tool is not touching the ground and other obstacles such as a tree.
22. During operation always hold the tool with both hands. Never hold the tool with one hand during use.
23. Do not operate the tool in bad weather or if there is a risk of lightning.

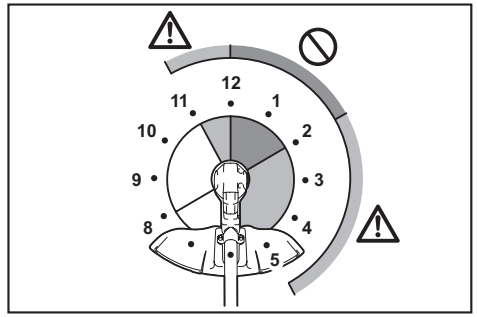
Operation

1. In the event of an emergency, switch off the tool immediately.
2. If you feel any unusual condition (e.g. noise, vibration) during operation, switch off the tool and remove the battery cartridge. Do not use the tool until the cause is recognized and solved.
3. The cutting attachment continues to rotate for a short period after turning the tool off. Don't rush to contact the cutting attachment.
4. During operation, use the shoulder harness. Keep the tool on your right side firmly.
5. Do not overreach. Keep proper footing and balance at all times. Watch for hidden obstacles such as tree stumps, roots and ditches to avoid stumbling.
6. Always be sure of your footing on slopes.
7. Walk, never run.
8. Never work on a ladder or tree to avoid loss of control.
9. If the tool gets heavy impact or fall, check the condition before continuing work. Check the controls and safety devices for malfunction. If there is any damage or doubt, ask our authorized service center for the inspection and repair.
10. Take a rest to prevent loss of control caused by fatigue. We recommend taking a 10 to 20-minute rest every hour.

Cutting tools

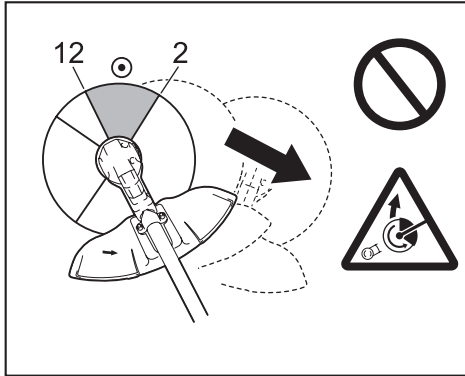
1. Do not use a cutting tool which is not recommended by us.
2. Use an applicable cutting attachment for the job in hand.
 - Nylon cutting heads (string trimmer heads) and plastic blades are suitable for trimming lawn grass.
 - Cutting blades are suitable for cutting weeds, high grasses, bushes, shrubs, underwood, thicket, and the like.
 - Never use other blades including metal multi-piece pivoting chains and flail blades. It may result in serious injury.

3. Only use the cutting tool that are marked with a speed equal or higher than the speed marked on the tool.
4. Always keep your hands, face, and clothes away from the cutting tool when it is rotating. Failure to do so may cause personal injury.
5. Always use the cutting attachment guard properly suited for the cutting attachment used.
6. When using cutting blades, avoid kickback and always prepare for an accidental kickback. See the section for Kickback.
7. When not in use, attach the blade cover onto the blade. Remove the cover before operation.



Kickback (Blade thrust)

1. Kickback (blade thrust) is a sudden reaction to a caught or bound cutting blade. Once it occurs, the tool is thrown sideways or toward the operator at great force and it may cause serious injury.
2. Kickback occurs particularly when applying the blade segment between 12 and 2 o'clock to solids, bushes and trees with 3 cm or larger diameter.



3. To avoid kickback:
 1. Apply the segment between 8 and 11 o'clock.
 2. Never apply the segment between 12 and 2 o'clock.
 3. Never apply the segment between 11 and 12 o'clock and between 2 and 5 o'clock, unless the operator is well trained and experienced and does it at his/her own risk.
 4. Never use cutting blades close to solids, such as fences, walls, tree trunks and stones.
 5. Never use cutting blades vertically, for such operations as edging and trimming hedges.

Vibration

1. People with poor circulation who are exposed to excessive vibration may experience injury to blood vessels or the nervous system. Vibration may cause the following symptoms to occur in the fingers, hands or wrists: "Falling asleep" (numbness), tingling, pain, stabbing sensation, alteration of skin color or of the skin. If any of these symptoms occur, see a physician!
2. To reduce the risk of "white finger disease", keep your hands warm during operation and well maintain the tool and accessories.

Transport

1. Before transporting the tool, turn it off and remove the battery cartridge. Attach the cover to the cutting blade.
2. When transporting the tool, carry it in a horizontal position by holding the shaft.
3. When transporting the tool in a vehicle, properly secure it to avoid turnover. Otherwise damage to the tool and other baggage may result.

Maintenance

1. Have your tool serviced by our authorized service center, always using only genuine replacement parts. Incorrect repair and poor maintenance can shorten the life of the tool and increase the risk of accidents.
2. Before doing any maintenance or repair work or cleaning the tool, always turn it off and remove the battery cartridge.
3. Always wear protective gloves when handling the cutting blade.
4. Always clean dust and dirt off the tool. Never use gasoline, benzene, thinner, alcohol or the like for the purpose. Discoloration, deformation or cracks of the plastic components may result.
5. After each use, tighten all screws and nuts.
6. Do not attempt any maintenance or repair not described in the instruction manual. Ask our authorized service center for such work.
7. Always use our genuine spare parts and accessories only. Using parts or accessories supplied by a third party may result in the tool breakdown, property damage and/or serious injury.

8. **Request our authorized service center to inspect and maintain the tool at regular interval.**
9. **Always keep the tool in good working condition.** Poor maintenance can result in inferior performance and shorten the life of the tool.

Storage

1. **Before storing the tool, perform full cleaning and maintenance. Remove the battery cartridge. Attach the cover to the cutting blade.**
2. **Store the tool in a dry and high or locked location out of reach of children.**
3. **Do not prop the tool against something, such as a wall.** Otherwise it may fall suddenly and cause an injury.

First aid

1. **Always have a first-aid kit close by. Immediately replace any item taken from the first aid kit.**
2. **When asking for help, give the following information:**
 - Place of the accident
 - What happened
 - Number of injured persons
 - Nature of the injury
 - Your name

Important safety instructions for battery cartridge

1. **Before using battery cartridge, read all instructions and cautionary markings on (1) battery charger, (2) battery, and (3) product using battery.**
2. **Do not disassemble battery cartridge.**
3. **If operating time has become excessively shorter, stop operating immediately. It may result in a risk of overheating, possible burns and even an explosion.**
4. **If electrolyte gets into your eyes, rinse them out with clear water and seek medical attention right away. It may result in loss of your eyesight.**
5. **Do not short the battery cartridge:**
 - (1) **Do not touch the terminals with any conductive material.**
 - (2) **Avoid storing battery cartridge in a container with other metal objects such as nails, coins, etc.**
 - (3) **Do not expose battery cartridge to water or rain.**

A battery short can cause a large current flow, overheating, possible burns and even a breakdown.

6. **Do not store the tool and battery cartridge in locations where the temperature may reach or exceed 50 °C (122 °F).**
7. **Do not incinerate the battery cartridge even if it is severely damaged or is completely worn out. The battery cartridge can explode in a fire.**
8. **Be careful not to drop or strike battery.**

9. **Do not use a damaged battery.**
10. **The contained lithium-ion batteries are subject to the Dangerous Goods Legislation requirements.**
For commercial transports e.g. by third parties, forwarding agents, special requirement on packaging and labeling must be observed.
For preparation of the item being shipped, consulting an expert for hazardous material is required. Please also observe possibly more detailed national regulations.
Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packaging.
11. **When disposing the battery cartridge, remove it from the tool and dispose of it in a safe place. Follow your local regulations relating to disposal of battery.**
12. **Use the batteries only with the products specified by Makita.** Installing the batteries to non-compliant products may result in a fire, excessive heat, explosion, or leak of electrolyte.
13. **If the tool is not used for a long period of time, the battery must be removed from the tool.**

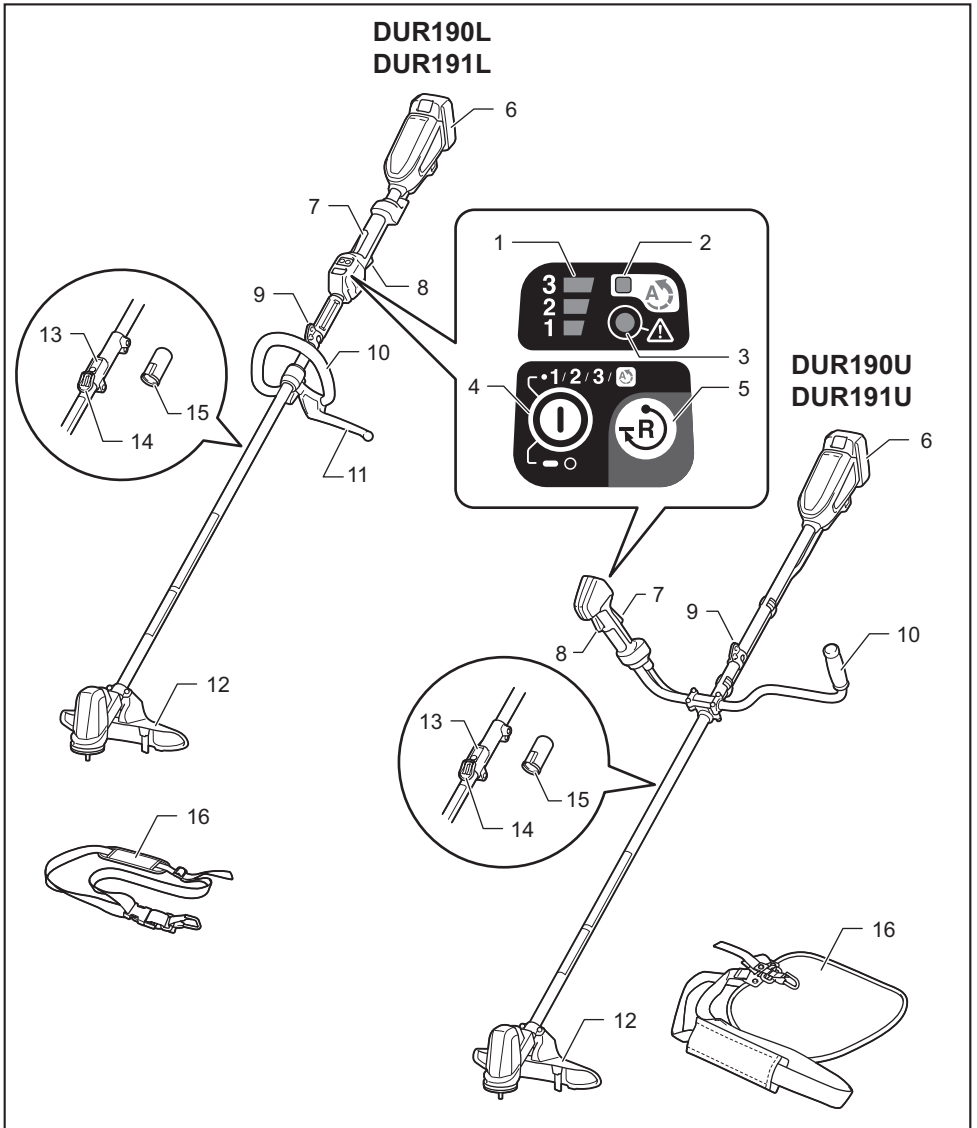
SAVE THESE INSTRUCTIONS.

⚠ CAUTION: Only use genuine Makita batteries. Use of non-genuine Makita batteries, or batteries that have been altered, may result in the battery bursting causing fires, personal injury and damage. It will also void the Makita warranty for the Makita tool and charger.

Tips for maintaining maximum battery life

1. **Charge the battery cartridge before completely discharged. Always stop tool operation and charge the battery cartridge when you notice less tool power.**
2. **Never recharge a fully charged battery cartridge. Overcharging shortens the battery service life.**
3. **Charge the battery cartridge with room temperature at 10 °C - 40 °C (50 °F - 104 °F). Let a hot battery cartridge cool down before charging it.**
4. **Charge the battery cartridge if you do not use it for a long period (more than six months).**

PARTS DESCRIPTION



1	Speed indicator	2	ADT indicator (ADT = Automatic Torque Drive Technology)	3	Caution lamp	4	Main power button
5	Reverse button	6	Battery cartridge	7	Lock-off lever	8	Switch trigger
9	Hanger	10	Handle	11	Barrier (country specific)	12	Protector
13	Lock lever (DUR191U and DUR191L only)	14	Joint cover (DUR191U and DUR191L only)	15	Cap (DUR191U and DUR191L only)	16	Shoulder harness

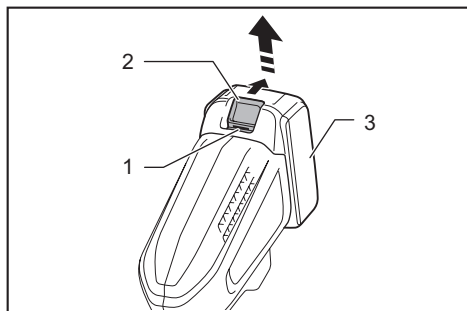
FUNCTIONAL DESCRIPTION

⚠ WARNING: Always be sure that the tool is switched off and the battery cartridge is removed before adjusting or checking function on the tool. Failure to switch off and remove the battery cartridge may result in serious personal injury from accidental start-up.

Installing or removing battery cartridge

⚠ CAUTION: Always switch off the tool before installing or removing of the battery cartridge.

⚠ CAUTION: Hold the tool and the battery cartridge firmly when installing or removing battery cartridge. Failure to hold the tool and the battery cartridge firmly may cause them to slip off your hands and result in damage to the tool and battery cartridge and a personal injury.



► 1. Red indicator 2. Button 3. Battery cartridge

To remove the battery cartridge, slide it from the tool while sliding the button on the front of the cartridge.

To install the battery cartridge, align the tongue on the battery cartridge with the groove in the housing and slip it into place. Insert it all the way until it locks in place with a little click. If you can see the red indicator on the upper side of the button, it is not locked completely.

⚠ CAUTION: Always install the battery cartridge fully until the red indicator cannot be seen. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.

⚠ CAUTION: Do not install the battery cartridge forcibly. If the cartridge does not slide in easily, it is not being inserted correctly.

Tool / battery protection system

The tool is equipped with a tool/battery protection system. This system automatically cuts off power to the motor to extend tool and battery life. The tool will automatically stop during operation if the tool is placed under one of the following conditions:

Caution lamp			Status
Color	● On	⦿ Blinking	
Red		⦿	Overload
Red	●		Overheat
Red		⦿	Over discharge

Overload protection

If the tool gets into one of the following situation, the tool automatically stops and the caution lamp starts blinking in red:

- The tool is overloaded by entangled weeds or other debris.
- The cutting tool is locked or kicked back.
- The main power button is turned on while the switch trigger is being pulled.

In this situation, release the switch trigger and remove entangled weeds or debris if necessary. After that, pull the switch trigger again to resume.

⚠ CAUTION: If you need to remove the entangled weeds on the tool or release the locked cutting tool, be sure to turn the tool off before you start.

Overheat protection for tool or battery

If the tool or battery cartridge is overheated, the tool stops automatically. When the tool or battery cartridge is overheated, the speed indicator and ADT indicator go off and the caution lamp lights up in red. Let the tool and/or battery cool down before turning the tool on again.

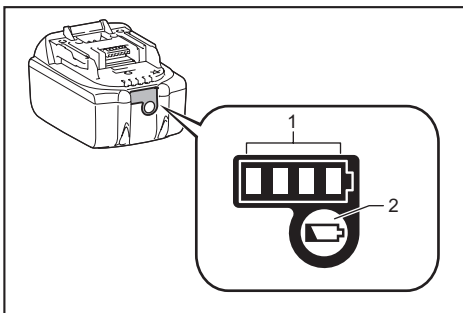
Overdischarge protection

When the battery capacity becomes low, the tool stops automatically. The speed indicator and ADT indicator go off and the caution lamp starts blinking in red.

If the tool does not operate even when the switches are operated, remove the battery cartridge from the tool and charge it.

Indicating the remaining battery capacity

Only for battery cartridges with the indicator



► 1. Indicator lamps 2. Check button

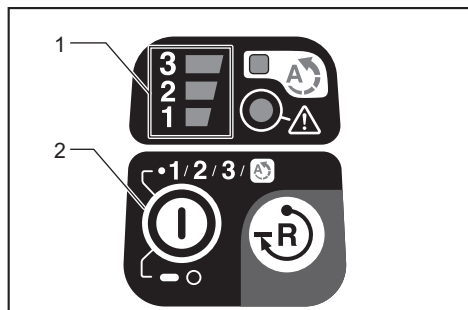
Press the check button on the battery cartridge to indicate the remaining battery capacity. The indicator lamps light up for a few seconds.

Indicator lamps			Remaining capacity
Lighted	Off	Blinking	
■	□	▬	75% to 100%
■	■	■	
■	■	□	
■	□	□	
■	□	□	25% to 50%
■	□	□	0% to 25%
▬	□	□	Charge the battery.
■	■	□	The battery may have malfunctioned.
□	□	■	

NOTE: Depending on the conditions of use and the ambient temperature, the indication may differ slightly from the actual capacity.

Main power switch

Tap the main power button to turn on the tool. To turn off the tool, press and hold the main power button until the speed indicator goes off.



► 1. Speed indicator 2. Main power button

NOTE: The tool will automatically turned off if it is left without any operations for a certain period of time.

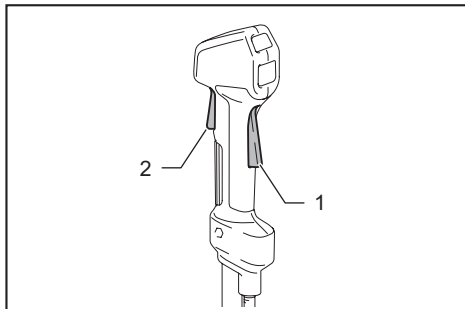
Switch action

⚠ WARNING: Before installing the battery cartridge on the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released. Operating a tool with a switch that does not actuate properly can lead to loss of control and serious personal injury.

⚠ CAUTION: Never put your finger on the switch when carrying. The tool may start unintentionally and cause injury.

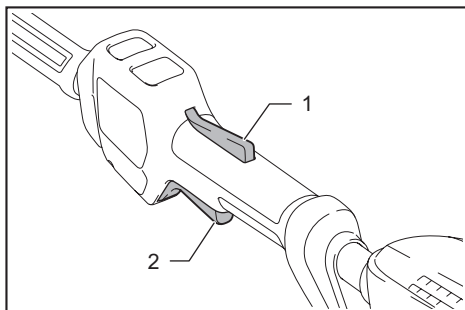
To prevent the switch trigger from being accidentally pulled, a lock-off lever is provided. To start the tool, grasp the handle (the lock-off lever is released by the grasp) and then pull the switch trigger. To stop the tool, release the switch trigger.

DUR190U and DUR191U



► 1. Lock-off lever 2. Switch trigger

DUR190L and DUR191L

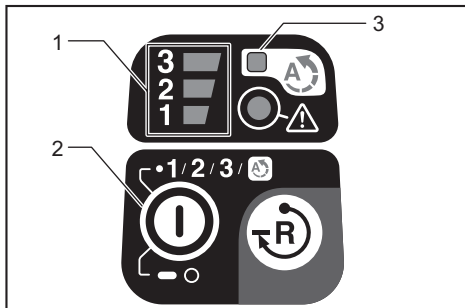


► 1. Lock-off lever 2. Switch trigger











NOTE: The tool is automatically turned off after the tool is left for a certain period without any operations.

Speed adjusting

You can select the tool speed by tapping the main power button. Each time you tap the main power button, the level of speed will change.



► 1. Speed indicator 2. Main power button 3. ADT indicator

Speed indicator	Mode	Rotation speed
	ADT	3,500 - 6,000 min ⁻¹
3  2  1 	High	6,000 min ⁻¹
3  2  1 	Medium	5,100 min ⁻¹
3  2  1 	Low	3,500 min ⁻¹

NOTE: When you set ADT (Automatic Torque Drive Technology), ADT indicator turns on and the tool runs at optimum rotation speed and torque for the condition of grass being cut.

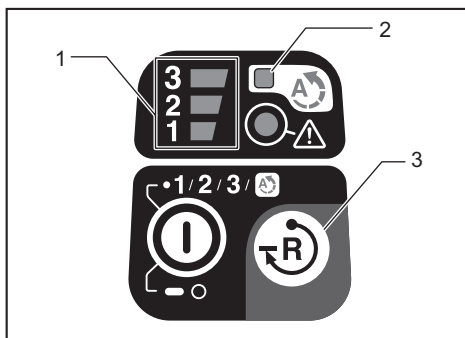
Reverse button for debris removal

⚠WARNING: Switch off the tool and remove the battery cartridge before you remove entangled weeds or debris which the reverse rotation function can not remove. Failure to switch off and remove the battery cartridge may result in serious personal injury from accidental start-up.

This tool has a reverse button to change the direction of rotation. It is only for removing weeds and debris entangled in the tool.

To reverse the rotation, tap the reverse button and pull the switch trigger while depressing the lock-off lever when the cutting tool is stopped. The speed indicators and ADT indicator start blinking, and the cutting tool rotates in reverse direction when you pull the switch trigger.

To return to regular rotation, release the trigger and wait until the cutting tool stops.



► 1. Speed indicator 2. ADT indicator 3. Reverse button

NOTE: During the reverse rotation, the tool operates only for a short period of time and then automatically stops.

NOTE: Once the tool is stopped, the rotation returns to regular direction when you start the tool again.

NOTE: If you tap the reverse button while the cutting tool is still rotating, the tool comes to stop and to be ready for reverse rotation.

Electric brake

This tool is equipped with an electric brake. If the tool consistently fails to quickly stop after the switch trigger is released, have the tool serviced at our service center.

⚠CAUTION: This brake system is not a substitute for the protector. Never use the tool without the protector. An unguarded cutting tool may result in serious personal injury.

ASSEMBLY

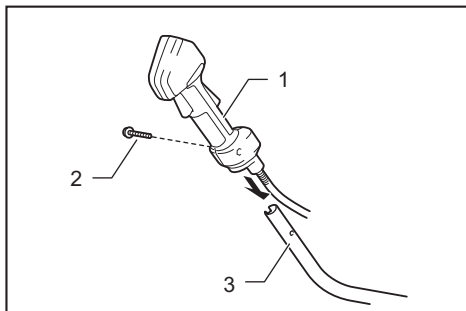
⚠WARNING: Always be sure that the tool is switched off and battery cartridge is removed before carrying out any work on the tool. Failure to switch off and remove the battery cartridge may result in serious personal injury from accidental start-up.

⚠WARNING: Never start the tool unless it is completely assembled. Operation of the tool in a partially assembled state may result in serious personal injury from accidental start-up.

Installing the handle

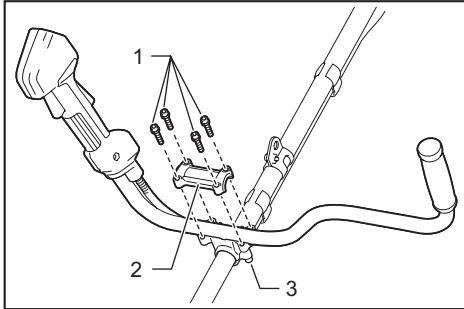
For DUR190U and DUR191U only

1. Insert the shaft of the handle into the grip. Align the screw hole in the grip with the one in the shaft. Tighten the screw securely.



► 1. Grip 2. Screw 3. Handle

- Place handle between handle clamp and handle holder. Adjust the handle to an angle that provides a comfortable working position and then secure with hex socket head bolts.

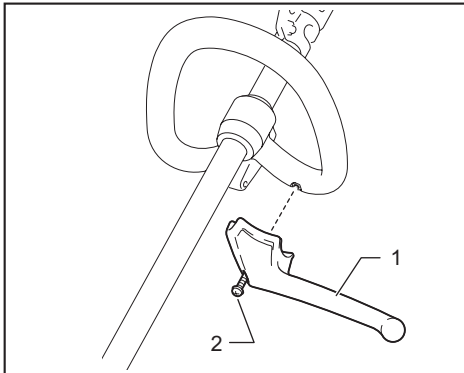


- 1. Hex socket head bolt 2. Handle clamp 3. Handle holder

Attaching the barrier

For DUR190L and DUR191L (country specific)

If the barrier is included in your model, attach it to the handle using the screw on the barrier.



- 1. Barrier 2. Screw

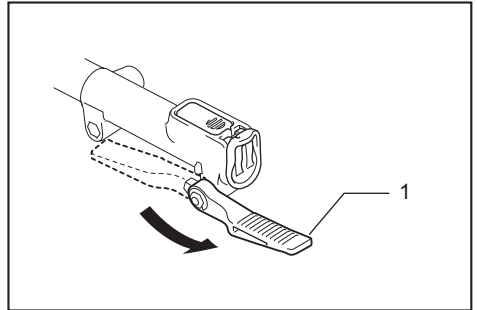
CAUTION: After assembling the barrier, do not remove it. The barrier works as a safety part to prevent you from contacting the cutting blade accidentally.

Mounting the attachment pipe

For DUR191U and DUR191L only

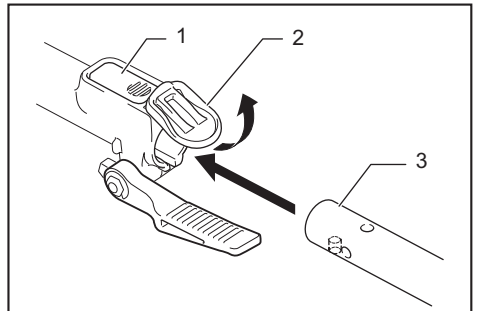
Mount the attachment pipe to the power unit.

- Turn the lever to the direction of the arrow shown in the figure.



- 1. Lever

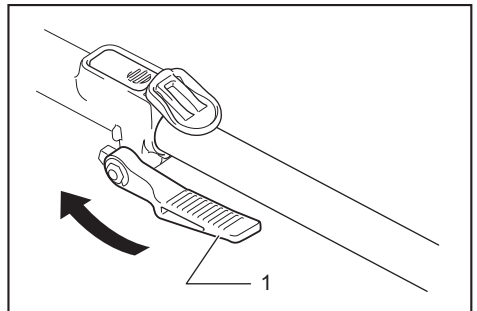
- Pull up the joint cover and insert the attachment pipe while aligning the protrusion on the pipe (cutting tool side) with the concave portion of the joint part.



- 1. Lock lever 2. Joint cover 3. Pipe

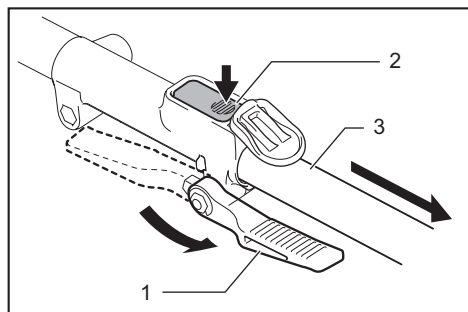
Make sure that the surface of the lock lever is parallel to the pipe.

- Turn the lever to the direction of the arrow shown in the figure.



- 1. Lever

To remove the pipe, turn the lever to the direction of the arrow shown in the figure and pull the pipe out while pressing down the lock lever.



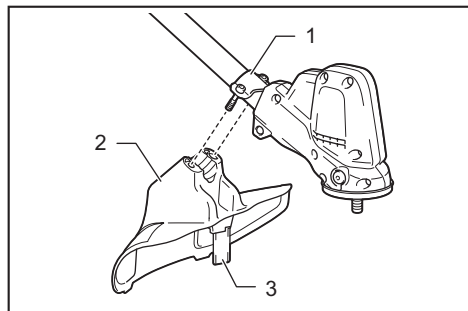
► 1. Lever 2. Lock lever 3. Pipe

Installing the protector

⚠WARNING: Never use the tool without the guard illustrated in place. Failure to do so can cause serious personal injury.

⚠CAUTION: Take care not to injure yourself on the cutter for cutting the nylon cord.

Attach the protector to the clamp using bolts.



► 1. Clamp 2. Protector 3. Cutter

Installing the cutting tool

NOTE: The type of the cutting tool(s) supplied as the standard accessory varies depending on the countries. The cutting tool is not included in some countries.

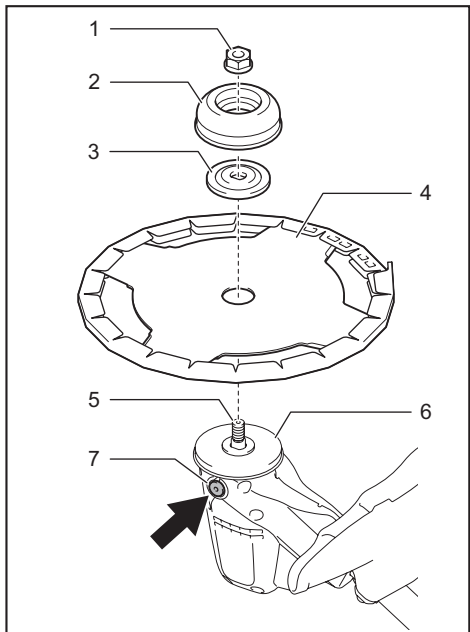
NOTE: Turn the tool upside down so that you can replace the cutting tool easily.

Cutter blade

⚠CAUTION: When handling a cutter blade, always wear gloves and put the blade cover on the blade.

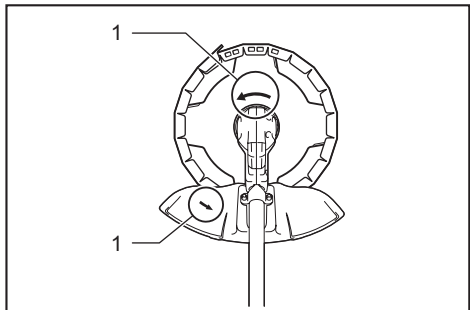
⚠CAUTION: The cutter blade must be well polished, and free of cracks or breakage. If the cutter blade hits a stone during operation, stop the tool and check the cutter blade immediately.

⚠CAUTION: Always use the cutter blade with the diameter described in the section for specifications.



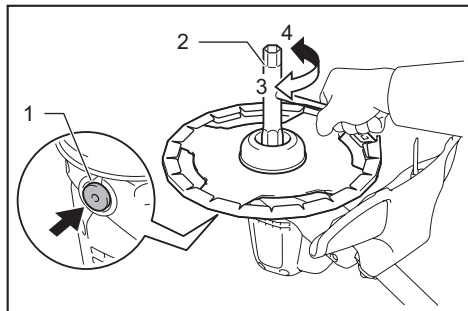
► 1. Nut 2. Cup 3. Clamp washer 4. Cutter blade 5. Spindle 6. Guard 7. Spindle lock button

1. Mount the cutter blade onto the guard so that the arrows on the cutter blade and protector are pointing in the same direction.



► 1. Arrow

2. Put the clamp washer and cup onto the cutter blade.
3. While holding down the spindle lock button, tighten the nut securely by the box wrench.



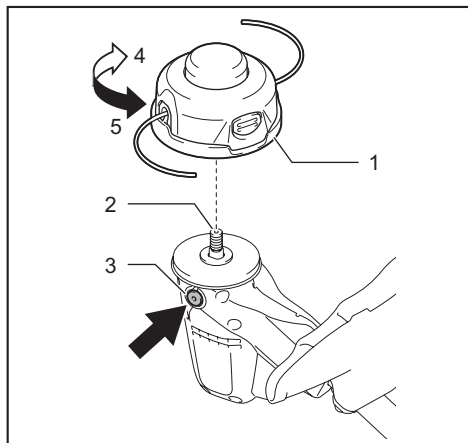
- 1. Spindle lock button 2. Box wrench 3. Loosen
4. Tighten

To remove the cutting blade, loosen the nut while holding down the spindle lock button.

Nylon cutting head

NOTICE: Be sure to use genuine Makita nylon cutting head.

While holding down the spindle lock button, place the nylon cutting head onto the spindle and tighten it securely by hand.



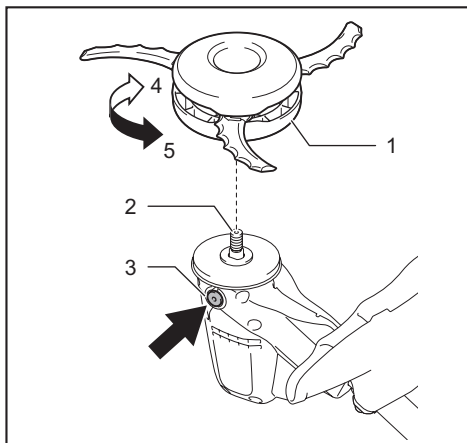
- 1. Nylon cutting head 2. Spindle 3. Spindle lock button 4. Loosen 5. Tighten

To remove the nylon cutting head, loosen the nylon cutting head while holding down the spindle lock button.

Plastic blade

NOTICE: Be sure to use genuine Makita plastic blade.

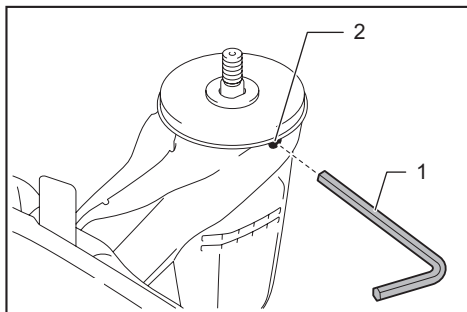
While holding down the spindle lock button, place the plastic blade onto the spindle and tighten it securely by hand.



- 1. Plastic blade 2. Spindle 3. Spindle lock button
4. Loosen 5. Tighten

To remove the plastic blade, loosen the plastic blade while holding down the spindle lock button.

NOTE: You can use the supplied hex wrench to install/remove the cutting tool. Insert the hex wrench to the hole as shown in the figure to lock the spindle.



- 1. Hex wrench 2. Hole

CAUTION: Always use the supplied wrenches to install/remove the cutting tool.

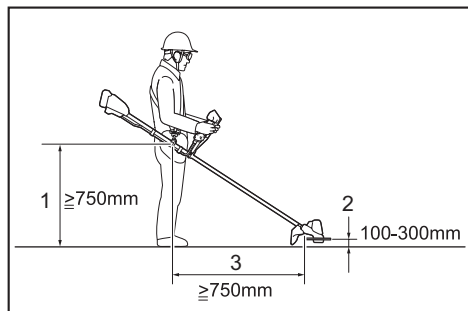
CAUTION: Be sure to remove the hex wrench inserted into the tool head after installing the cutting tool.

Adjusting the handle/hanger position

Adjust the handle and hanger position to obtain comfortable handling of the tool.

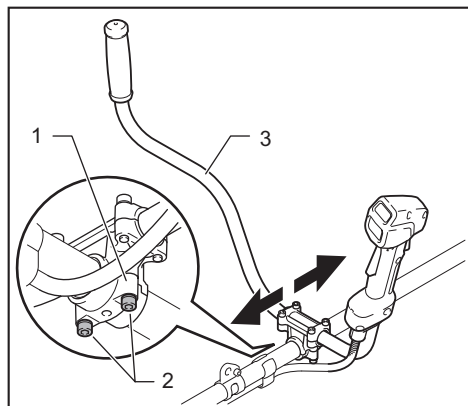
For DUR190U and DUR191U

Adjust the handle/hanger position so that the tool comes within the range as shown below.



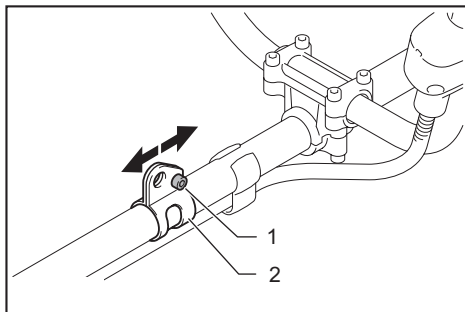
1	The hanger position from the ground
2	The cutting tool position from the ground
3	The horizontal distance between the hanger and the unguarded part of the cutting tool

Loosen the hex socket head bolts on the bottom of the handle holder. Move the handle to a comfortable working position and then tighten the bolts.



► 1. Handle holder 2. Hex socket head bolt 3. Handle

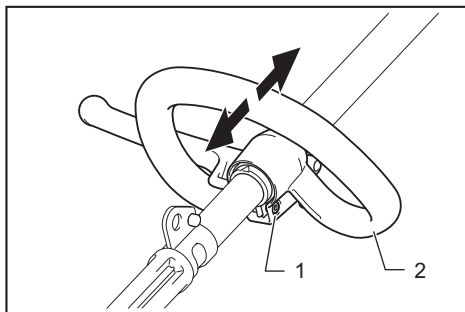
Loosen the Hex socket head bolts on the hanger. Move the hanger to a comfortable working position and then tighten the bolts.



► 1. Hex socket head bolt 2. Hanger

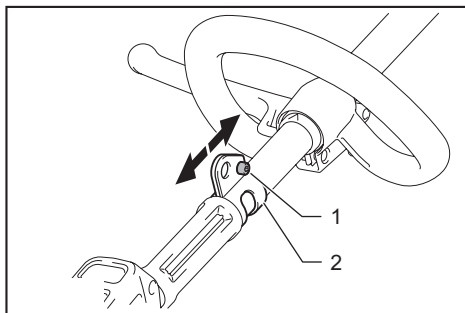
For DUR190L and DUR191L

Loosen the hex socket head bolts on the handle. Move the handle to a comfortable working position and then tighten the bolts.



► 1. Hex socket head bolt 2. Handle

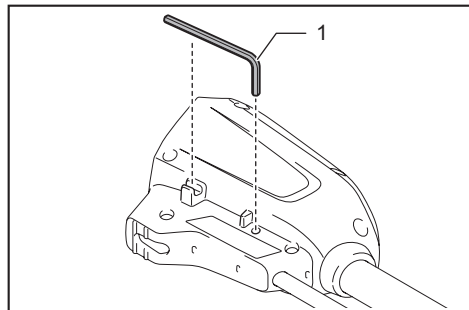
Loosen the hex socket head bolt on the hanger. Move the hanger to a comfortable working position and then tighten the bolt.



► 1. Hex socket head bolt 2. Hanger

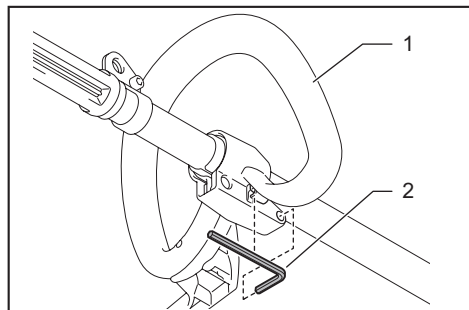
Hex wrench storage

When not in use, store the hex wrench as shown in the figure to keep it from being lost.



► 1. Hex wrench

For DUR190L and DUR191L only



► 1. Handle 2. Hex wrench

OPERATION

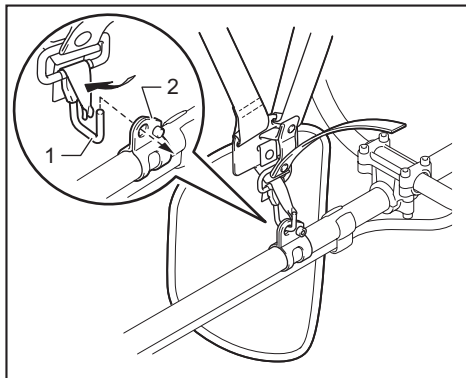
Attaching the shoulder harness

⚠ CAUTION: Always use the shoulder harness attached to the tool. Before operation, adjust the shoulder harness according to the user size to prevent fatigue.

⚠ CAUTION: Before operation, make sure that the shoulder harness is properly attached to the hanger on the tool.

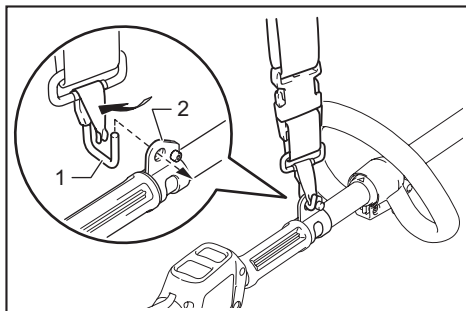
Connect the hook of the shoulder harness to the hanger and put the shoulder harness on. Make sure that the tool is held securely by the shoulder harness.

DUR190U and DUR191U



► 1. Hook 2. Hanger

DUR190L and DUR191L

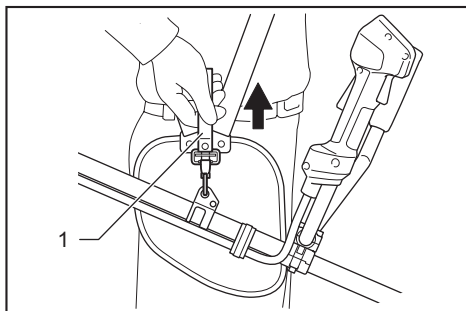


► 1. Hook 2. Hanger

Detachment

The shoulder harness features a means of quick release.

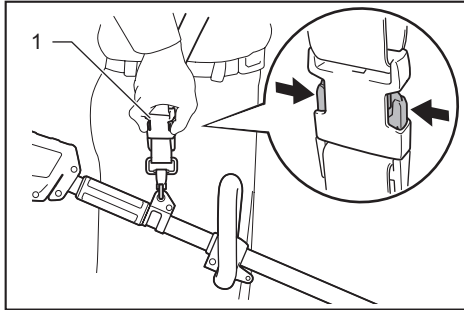
DUR190U and DUR191U



► 1. Strip

Pull out the strip release the tool from the shoulder harness.

DUR190L and DUR191L



► 1. Buckle

Simply squeeze the sides of the buckle to release the tool from the shoulder harness.

Correct handling of the tool

⚠ WARNING: Always position the tool on your right-hand side. Correct positioning of the tool allows for maximum control and will reduce the risk of serious personal injury caused by kickback.

⚠ WARNING: Be extremely careful to maintain control of the tool at all times. Do not allow the tool to be deflected toward you or anyone in the work vicinity. Failure to keep control of the tool could result in serious injury to the bystander and the operator.

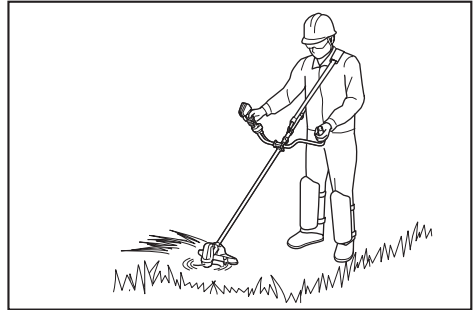
⚠ WARNING: To avoid accident, leave more than 15m (50 ft) distance between operators when two or more operators work in one area. Also, arrange a person to observe the distance between operators. If someone or an animal enters the working area, immediately stop the operation.

⚠ CAUTION: If the cutting tool accidentally impacts a rock or hard object during operation, stop the tool and inspect for any damage. If the cutting tool is damaged, replace it immediately. Use of a damaged cutting tool may result in serious personal injury.

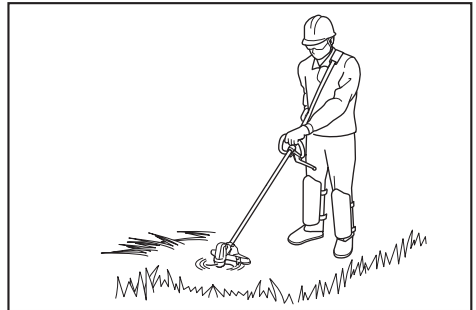
⚠ CAUTION: Remove the blade cover from the cutter blade when cutting the grass.

Correct positioning and handling allow optimum control and reduce the risk of injury caused by kickback.

DUR190U and DUR191U

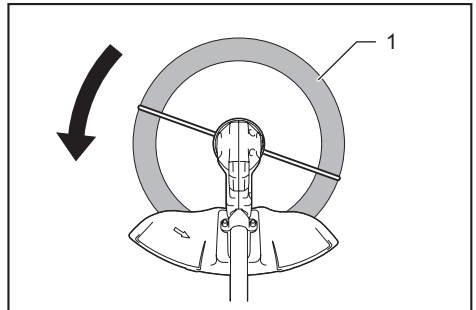


DUR190L and DUR191L



When using a nylon cutting head (bump & feed type)

The nylon cutting head is a dual string trimmer head provided with a bump & feed mechanism. To feed out the nylon cord, tap the cutting head against the ground while rotating.



► 1. Most effective cutting area

NOTICE: The bump feed will not operate properly if the nylon cutting head is not rotating.

NOTE: If the nylon cord does not feed out while tapping the head, rewind/replace the nylon cord by following the procedures in the section for the maintenance.

MAINTENANCE

⚠ WARNING: Always be sure that the tool is switched off and battery cartridge is removed before attempting to perform inspection or maintenance on the tool. Failure to switch off and remove the battery cartridge may result in serious personal injury from accidental start-up.

NOTICE: Never use gasoline, benzine, thinner, alcohol or the like. Discoloration, deformation or cracks may result.

To maintain product SAFETY and RELIABILITY, repairs, any other maintenance or adjustment should be performed by Makita Authorized or Factory Service Centers, always using Makita replacement parts.

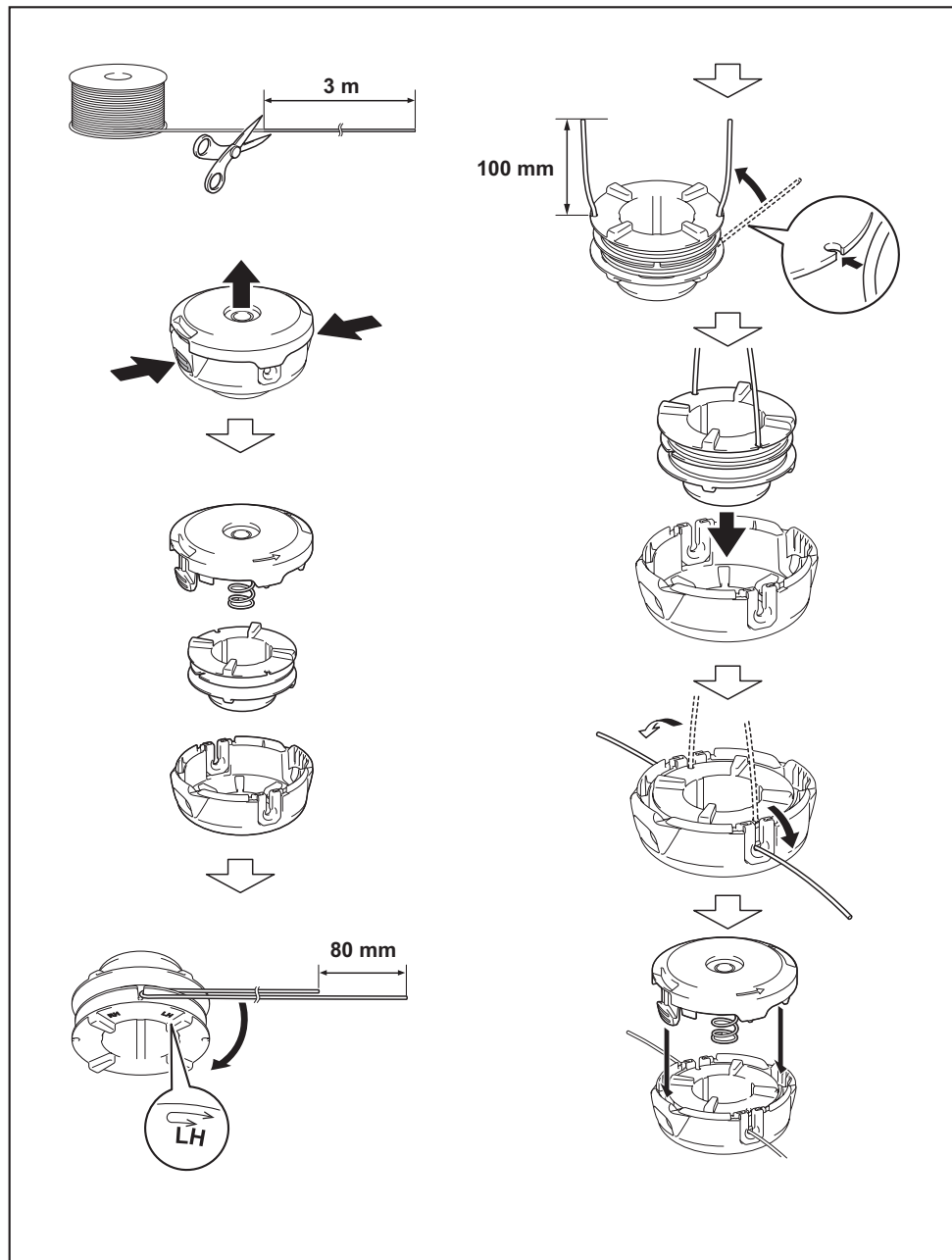
Replacing the nylon cord

⚠ WARNING: Use only the nylon cord with diameter specified in this instruction manual. Never use heavier line, metal wire, rope or the like. Failure to do so may cause damage to the tool and result in serious personal injury.

⚠ WARNING: Always remove the nylon cutting head from the tool when replacing the nylon cord.

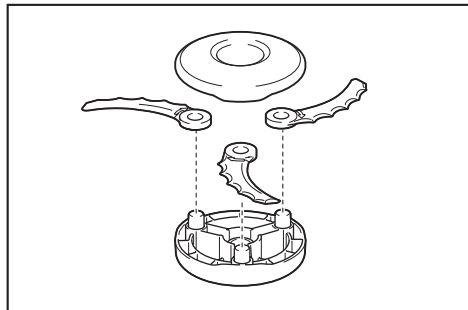
⚠ WARNING: Make sure that the cover of the nylon cutting head is secured to the housing properly as described in this instruction manual. Failure to properly secure the cover may cause the nylon cutting head to fly apart resulting in serious personal injury.

Replace the nylon cord if it is not fed any more. The method of replacing the nylon cord varies depending on the type of the nylon cutting head.

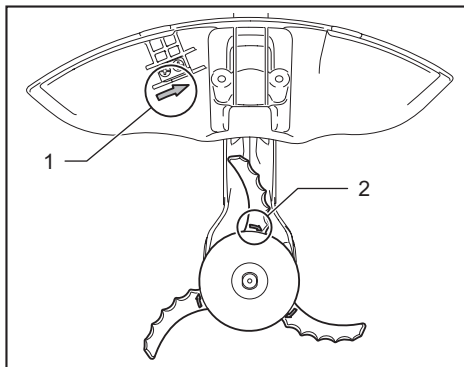


Replacing the plastic blade

Replace the plastic blade if it is worn out or broken.



When installing the plastic blade, align the direction of the arrow on the blade with that of the protector.



► 1. Arrow on the protector 2. Arrow on the blade

TROUBLESHOOTING

Before asking for repairs, conduct your own inspection first. If you find a problem that is not explained in the manual, do not attempt to dismantle the tool. Instead, ask Makita Authorized Service Centers, always using Makita replacement parts for repairs.

State of abnormality	Probable cause (malfunction)	Remedy
Motor does not run.	Battery cartridge is not installed.	Install the battery cartridge.
	Battery problem (under voltage)	Recharge the battery. If recharging is not effective, replace battery.
	The drive system does not work correctly.	Ask your local authorized service center for repair.
Motor stops running after a little use.	Battery's charge level is low.	Recharge the battery. If recharging is not effective, replace battery.
	Overheating.	Stop using of tool to allow it to cool down.
It does not reach maximum RPM.	Battery is installed improperly.	Install the battery cartridge as described in this manual.
	Battery power is dropping.	Recharge the battery. If recharging is not effective, replace battery.
	The drive system does not work correctly.	Ask your local authorized service center for repair.
Cutting tool does not rotate: ⇒ stop the machine immediately!	Foreign object such as a branch is jammed between the guard and the cutting tool.	Remove the foreign object.
	The drive system does not work correctly.	Ask your local authorized service center for repair.
Abnormal vibration: ⇒ stop the machine immediately!	One end of the nylon cord has been broken.	Tap the nylon cutting head against the ground while it is rotating to cause the cord to feed.
	The drive system does not work correctly.	Ask your local authorized service center for repair.
Cutting tool and motor cannot stop: ⇒ Remove the battery immediately!	Electric or electronic malfunction.	Remove the battery and ask your local authorized service center for repair.

OPTIONAL ACCESSORIES

⚠WARNING: Only use the recommended accessories or attachments indicated in this manual. The use of any other accessory or attachment may result in serious personal injury.

⚠CAUTION: These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. Only use accessory or attachment for its stated purpose.

If you need any assistance for more details regarding these accessories, ask your local Makita Service Center.

- Cutter blade
- Nylon cutting head
- Nylon cord (cutting line)
- Plastic blade
- Makita genuine battery and charger

NOTE: Some items in the list may be included in the tool package as standard accessories. They may differ from country to country.

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